



Patent
Attorney's Docket No. 005950-677

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Dennis J. O'Rear

Application No.: 09/882,675

Filed: June 15, 2001

For: Temporary Antioxidants for Fischer-Tropsch Products

)
)
) Group Art Unit: 1764

)
) Examiner: Ellen M. McAvoy

)
) Confirmation No.: 9491

GROUP 1700

JUL 07 2003

RECEIVED

RESPONSE UNDER 37 C.F.R. §1.111

Commissioner of Patents and Trademarks

~~Box PCT~~

Washington, DC 20231

Sir:

In complete response to the Office Action dated April 7, 2003, Applicant submits the following response.

Status of the Claims

Claims 1 – 22 are pending, with claims 1 and 15 being independent. Applicant respectfully requests the Examiner to reconsider and withdraw the outstanding rejections in view of the following remarks.

The Present Invention

The presently claimed invention relates to a blended hydrocarbonaceous product comprising a Fischer-Tropsch derived product and an effective amount of a temporary antioxidant such that the blended product has a peroxide number of less than 5 ppm after 7 days. In an embodiment the temporary antioxidant is a sulfur-containing temporary antioxidant and the sulfur content of the blended hydrocarbonaceous product is ≥ 1 ppm.

The specification teaches that a "temporary antioxidant" is any antioxidant that is more volatile than the Fischer Tropsch product such that it can be removed by processes such as simple distillation or stripping and the like. The specification

teaches that the temporary antioxidants are typically sulfur-containing compounds. The specification further teaches that temporary antioxidants include, for example, sulfides, disulfides, polysulfides, and the like. (page 8, paragraph [0035]).

The specification teaches that the temporary antioxidants are added and blended into the Fischer Tropsch products and provide protection against oxidation during shipment and storage, and after the period in which oxidation is to be prevented and before use/sale of the Fischer Tropsch products, the temporary antioxidants are removed. (page 11, paragraph [0047]).

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1 – 22 are rejected under 35 U.S.C. § 103(a) as being obvious over Alward (U.S. Patent No. 5,453,211). Applicant respectfully disagrees with this rejection; therefore, this rejection is traversed.

Alward relates to improving the oxidation stability of lube base oils by the addition of tetralins or combination of tetralins and organic sulfides. Alward teaches that it has been discovered that the ability of lubricating oil basestocks and formulated lubricating base oils to resist oxidation can be improved by the use of additives selected from tetralins or alkylated tetralins or mixtures thereof or the combination of tetralins or alkylated tetralins or mixtures thereof and organic sulfides. (Col. 2, lines 5-10, and claim 1). Alward teaches that an amount of organic sulfide, *may be used in combination with* the tetralin or alkyl substituted tetralin. (Col. 3, lines 5-11, emphasis added). Alward further teaches that the tetralin or alkyl substituted tetralin can be used with *or without* organic sulfides. (Col. 3, lines 27-29).

Accordingly, to improve the oxidation stability, Alward teaches that a tetralin or alkylated tetralin is to be used. (Col. 2, lines 21-24). This tetralin or alkylated tetralin *may* be used in combination with organic sulfides; however, the *tetralin* or alkylated tetralin is *essential* for improving the oxidation stability of the lubricating oil. Tetralin has a boiling point of 207°C and thus does not meet the definition of a temporary antioxidant according to the present invention. Alkylated tetralins would have even higher boiling points.

In the presently claimed invention, the blended hydrocarbonaceous product comprises an *effective amount* of a *temporary antioxidant* such that the blended

product has a peroxide number of less than 5 ppm after 7 days. Accordingly, the temporary antioxidant is in an amount such that it provides a blended product having a peroxide number of less than 5 ppm after 7 days.

Applicant respectfully submits that Alward does not teach or suggest the presently claimed blended hydrocarbonaceous product comprising an *effective amount* of a *temporary antioxidant*. Alward teaches using tetralins, alkylated tetralins, or mixtures thereof to improve the oxidation stability of lubricating oil. Alward further teaches that the tetralin or alkyl substituted tetralin can be used with *or without* organic sulfides. Applicant respectfully submits that the boiling points of tetralin and alkylated tetralins are too high to meet the definition of a temporary antioxidant according to the present invention. Applicant further respectfully submits that since Alward teaches using the organic sulfides only in combination with tetralin or alkyl substituted tetralin or mixtures thereof, Alward does not teach or suggest adding solely the organic sulfides in an amount such that the product has peroxide number of less than 5 ppm after 7 days. Alward does not teach or suggest using the organic sulfides, in the absence of tetralins, in an effective amount according to the presently claimed invention. Therefore, since the organic sulfides are used only in combination with tetralins, Applicant respectfully submits that Alward does not teach or suggest a blended hydrocarbonaceous product comprising an effective amount of a temporary antioxidant.

claims
do not
exist
in prior art

Claims 1 – 22 are also rejected under 35 U.S.C. §103(a) as being obvious over Berlowitz (WO 00/11116) or Berlowitz (WO 00/11117) in combination with Alward. Applicant respectfully disagrees with this rejection; therefore, this rejection is traversed.

Berlowitz '116 relates to a Fischer-Tropsch derived distillate blended with either a raw gas field condensate distillate fraction or a mildly hydrotreated condensate fraction. Berlowitz '116 teaches that the gas field condensate is a C₈-700°F fraction and the Fischer Tropsch derived distillate is also a C₈-700°F. (Col. 2, lines 11-13 and claim 1).

Berlowitz '117 relates to a Fischer-Tropsch derived distillate fraction blended with either a raw virgin condensate fraction or a mildly hydrotreated virgin

condensate. Berlowitz '117 teaches that the virgin distillate comprises a C₈-700°F stream comprised of 250-700°F fraction and the Fischer Tropsch derived distillate also comprises a C₈-700°F stream comprised of 250-700°F fraction. (Col. 2, lines 11-13 and claim 1).

In contrast, the presently claimed invention relates to a blended hydrocarbonaceous product comprising a Fischer-Tropsch derived product and an effective amount of a *temporary antioxidant* such that the blended product has a peroxide number of less than 5 ppm after 7 days. The specification teaches that a "temporary antioxidant" is an antioxidant that is *more volatile* than the Fischer Tropsch product such that it can be removed by processes such as simple distillation or stripping and the like.

Berlowitz ('116 and '117) teaches that the gas field condensate or virgin distillate fraction and the Fischer Tropsch derived distillate are *both* C₈-700°F fractions. Therefore, the gas field condensate and virgin distillate fractions are not more volatile than the Fischer Tropsch fraction, and thus, do not meet the definition of a temporary antioxidant according to the present invention. Since the gas field condensate and virgin distillate fractions of Berlowitz have boiling points in the same range as the Fischer Tropsch derived distillate, Applicant respectfully submits that the sulfur-containing gas field condensate and virgin distillate fractions *cannot* be removed by distillation. Accordingly, Applicant respectfully submits that Berlowitz ('116 and '117) does not teach or suggest the presently claimed blended hydrocarbonaceous product comprising an effective amount of a temporary antioxidant.

Alward, as described above, relates to improving the oxidation stability of lube base oils by the addition of tetralins or combination of tetralins and organic sulfides. Also as explained above, Alward does not teach or suggest using the organic sulfides, in the absence of tetralins, in an effective amount as defined according to the presently claimed invention.

Accordingly, it is respectfully submitted that even if there were some suggestion or motivation to combine the reference teachings and a reasonable expectation of success, Berlowitz and Alward, even if combined, do not teach or suggest the presently claimed blended hydrocarbonaceous product comprising an

effective amount of a *temporary antioxidant* such that the blended product has a peroxide number of less than 5 ppm after 7 days. Even when combined, Berlowitz and Alward do not teach or suggest removing the sulfur-containing gas field condensate and virgin distillate fractions of Berlowitz from the Fischer Tropsch derived distillate.

Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

Double Patenting

Claims 1-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 6,392,108 (O'Rear). Applicant believes that the present claims are patentably distinct over the claims of the '108 patent. However, to facilitate allowable subject matter, Applicants will consider submitting a terminal disclaimer over the '108 patent under separate cover, as appropriate, once allowable subject matter has been agreed upon. The filing of a Terminal Disclaimer is not to be construed as an admission of the propriety of the rejection on obvious double patenting. *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 20 USPQ2d 1392 (Fed. Cir. 1991).

In view thereof, Applicants respectfully request that this rejection be withdrawn.

Conclusion

For the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present invention as defined by the claims.

In view of the foregoing remarks, reconsideration of the claims and allowance of the subject application is earnestly solicited. The Examiner is invited to contact the undersigned at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Mel. M. Hayworth
Melissa M. Hayworth
Registration No. 45,774

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: July 2, 2003